



PRESENTED BY
Dr. M.N. KULKARNI

Current Views on Nutrition Strategies

REPORT OF AN INFORMAL CONSULTATION
IN UNICEF HEADQUARTERS, NEW YORK
SEPTEMBER 25-26, 1982

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FOREWORD

In the introduction to UNICEF's Annual Report for 1982, I wrote that

"Not for a generation have expectations of world development, and hopes for an end to life-denying mass poverty, been at such a low ebb. The conviction growing so rapidly since the tragedy of World War II (of which the establishment of UNICEF was a part) that the blessings of this earth ought to be extended to all its inhabitants, is under challenge. Ironically, the determination to make that conviction a living reality - at least to provide a 'safety net' to protect the most vulnerable of the world's children and their mothers - is increasingly under challenge at the time that the means to accomplish this are relatively ready to hand."

When I wrote that statement in the summer of 1982, I was not quite sure just how "ready" those means truly are. It was not until late September 1982 that a group of experts from several agencies and institutions concerned with the quality of children's lives gathered in a UNICEF conference room to review the "state of the art" of nutrition and health measures addressed explicitly at reducing the high rates of infant and child mortality and morbidity which afflict so many poor countries. We found the group's views clearly reinforcing a basic position that the state of the art is well advanced; and in spite of many constraints, a great deal can be accomplished at a level which is not very costly at all.

It is also a fact that recent developments in social and biological sciences present a very promising opportunity for bringing about a child health revolution which is low in cost and can be achieved in a relatively short span of years. A serious commitment to this "revolution" by governments and people could reduce malnutrition, disabilities and deaths among children in most developing countries (mortality now exceeding 40,000 **each day**) by at least half before the end of this century - and in many countries, within a decade - and further improvements in the well being of mothers and children. We realized that this revolution could be as momentous for children in the decade ahead as was the Green Revolution for increasing grain production in many countries in Asia in the decade from the late 1960s.

This report reflects the essence of the discussion at that meeting. I am confident it can be an important contribution to the thinking of senior policy makers, members of the international development community, interested scientists, and community leaders.

We at UNICEF are pleased to have convened this meeting and to make this report available. It is but one instance of our continuing commitment to distilling the experience of our own 36 years, and mixing with that the experience of others, in the search for new ways to help children more effectively and more extensively with the limited resources available.

James P. Grant
Executive Director

I. The Purpose

Three decades of advocacy, research and action in combatting the world's hunger and malnutrition has brought about a certain ripeness in the international environment for addressing such global problems more effectively in the immediate future.

UNICEF is sharing a very unique experience and valuable opportunity with a number of developing countries and major international institutions in mounting a programme of action against hunger and malnutrition in these developing countries.

At this critical time, all those involved in this experience share a common concern and that is access to the best available analysis of the lessons learned in this field in the recent past and accurate knowledge of the options and opportunities that lie ahead. It is critical that past mistakes are not repeated and future opportunities are not wasted.

In this spirit and at the invitation of Mr. James P. Grant, the Executive Director of UNICEF, an informal consultation was held in UNICEF headquarters, New York during September 25-26, 1982. The purpose of this meeting was to explore the lessons of the recent past and review current views on effective, feasible and affordable approaches to address problems of hunger and malnutrition especially among women and young children.

The discussions were frank and informal. However, in order to maintain sufficient focus on practical operational issues of immediate concern to UNICEF the **discussions primarily concentrated in the following areas:**

First, a brief review of some major approaches and experiences in the recent past. For this purpose, a wide spectrum of experiences were discussed. At one end of this spectrum lies the Green Revolution, a major scientific, technological breakthrough with significant impact on many dimensions of human life. At the other end of the spectrum lies the highly-targetted, child-focused approach, where the health care/nutrition services are geared to respond effectively to the needs of the child (e.g. Indonesia). In between these two extremes lie other major experiences such as consumer food subsidies, food marketing, local food production, home gardens, free distribution of foods, mobilization of the small farmer and the landless around easy credit as entry point to rural development with subsequent integration of nutrition and health components (e.g. Nepal); community based primary health care, where meeting the immediate health needs of the community serves as the major entry point for broader action (e.g. Thailand).

Second, the aspects of the human nutrition problems that can or cannot be effectively addressed through the health sector: the discussion primarily focused on potential delivery functions of the primary health care system and other activities possible to organize through health sector such as fortification, nutrition education and surveillance. Critical factors in implementation, monitoring and evaluation were also reviewed.

Third, integration of health and food/poverty strategies, syn-

ergistic reinforcing and complementary opportunities that food sector strategies offer especially in the context of short/medium term safety net concept were discussed and the possibilities of simultaneous local action on the food/poverty side of the problem were examined.

Fourth, on planning and implementation issues with particular emphasis on building a participatory and self-reliant approach to food and nutrition issues at all levels. The discussion focused on practical ways of expanding and strengthening the national and local capacities for problem solving in this area.

Fifth, the contribution that research is expected to make to future progress with particular emphasis on priorities, costs and methods of integration and effective utilization of knowledge.

UNICEF felt highly privileged in hosting this meeting with a distinguished group of participants; all from high levels of responsibility, experience and expertise. They made an excellent contribution to the purposes of this meeting for which UNICEF is deeply grateful.

This report presents an attempt in giving a true reflection of the lessons of the past and issues of the future as seen by the participants. Although there was an overall agreement during the entire discussion, participants as a group did not have complete consensus on a number of issues and considering the scope and complexities of the debate and limitations in time, this is only natural. I, of course, accept responsibility for errors and omissions.

This report merits full attention as a valuable reference in our future work.

Hossein Ghassemi
Senior Advisor, Nutrition, New York

II. Summary and Conclusions

It was about twenty years ago that the world was going through serious anxieties due to an acute food crisis. For those who remember, the international community responded to this crisis very effectively. It was a combination of strong will and miracles of a scientific and technological breakthrough that brought about an unprecedented increase in food grain production in a number of developing countries which eased the acute problem to a considerable extent. This miracle was named "Green Revolution".

Today, the world is to accord serious attention to another crisis, and that is the "crisis of dying children". In every day of this past year more than 40,000 young children have died from malnutrition and infection.

The food crisis of the sixties was a loud emergency. It quickly made the alarm bells ring and the world responded willing. The crisis of dying children is a silent one, and it is the duty of child advocates to get the bells ringing.

Without being sufficiently alarmed, the world community has tried many avenues of action over the past three decades with limited success. Some lines of action were geared to make more and better foods available to the needy mothers and children. Others were designed to treat and prevent illnesses, improve child feeding, and health conditions of women and children.

In most experiences, major constraints have been low priorities, lack of appropriate technology and infrastructure, high costs and low coverage. Future breakthrough in control of hunger and malnutrition will, to a large extent, come as a result of progress in the following three areas:

- Proper infant and young child feeding so as to be socially, economically and culturally possible and affordable by various countries;
- Control of major diseases which interfere with utilization of foods and nutrients and contribute to the vicious cycle of malnutrition and infection among young children and women;
- Entitlement of the poor to adequate food either through producing more food or gaining sustained and sufficient access to enough food.

The world has learned in a hard way that real success is likely to materialize only if solving the problems of hunger and malnutrition becomes a concern of the community, if the priorities are set right, if a low cost technology is available and if the community is prepared to share the costs and can afford it.

Promising Approaches

In recent years, two impressive approaches have developed which are highly complementary and do have most of such necessary characteristics as given above.

First, is the concept of **primary health care** where health and disease are to become issues around which the community is to be mobilized and organized for self-reliant, participatory and multisectoral action.

Second, poverty reduction approach where increased income and production of foods are the priority issues around which the community will be mobilized and organized.

The primary health care concept has three major features:

- a. Places health at the center of development, and takes a broad intersectoral approach to health as a major outcome of development.
- b. Advocates a relatively low cost, practical technology i.e., village health workers and low cost facilities and technics which would facilitate rapid expansion and coverage and thereby overcoming problems of limited outreach.
- c. It is based on the principle of community participation i.e., health is the concern of people and it should materialize through their participation in the process, i.e., identifying the priorities, determining the course of action and sharing local resources to meet the costs, while technical and management support and additional financial resources are provided by the government.

Obviously this is a very powerful concept, but a good number of operational aspects remain to be worked out; and therefore,

the major challenge is how to operationalize this concept over time.

A good number of lessons in implementation have been learned in recent years. It is clear that short-term and long-term approaches to planning are highly complementary. Long-term planning, no matter how complicated and expensive, is necessary and important. Short-term planning should be primarily designed around political opportunities for removal of constraints and barriers to development while the long-term objectives are clearly kept in sight.

Need For Focus

The governments are more likely to be interested in **focusing** on a simple, low-cost and manageable mix of action in order to make an impressive start with the understanding that the other elements of action required within a broad strategy would be brought into the picture in a **sequence** of steps. One good example of focus in approach on the health front is a mix* of "improved **breastfeeding**/complementary feeding; **immunization** of common diseases of childhood; monitoring of **growth** of infants and young children and **oral rehydration** therapy against diarrheal disease". This mix of action or other varieties of such mix will have a very effective child saving impact. This is in view of the fact that the majority of deaths which occur in young children today are due to a small handful of conditions.

Effective and large scale implementation of a focused, low cost child saving mix of measures can prove to be an answer to the crisis of dying children especially if remedies to the immediate problems on the mother's side are integrated into the mix.

The problem of maternal nutrition has critical health and development significance, which unfortunately, has received little attention so far. The state of maternal nutrition affects women's health, their ability to work, to give birth to healthy infants, to provide breastmilk and child care. Obviously the health and well-being of mothers and children are closely interlinked. Maternal nutrition has a strong bearing on universal breastfeeding, appropriate child feeding and health and participation of women in development.

The important issue here is the grave risk of chronic physiological depletion among women due to repeated and close pregnancies and prolonged lactation. To carry the argument one step further, women are not to be properly nourished only for the sake of giving birth to healthy babies and providing sufficient breastmilk but also for their own health and productivity. Therefore, an adequate diet for women is to be seen as a central issue and a major factor in relation to progress in the health and nutritional well-being of children and women, family life, and participation of women in development as producers, consumers and important members of the family. In this context availability of **foods** and change of social and cultural norms in favour of women is important.

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*The mnemonic GOBI-FF to stand for Growth, Oral rehydration therapy, Breastfeeding/Complementary feeding and Immunization - plus the more difficult but equally vital elements of Food and Family planning. Of course in many countries, the key elements may differ.

Looking at the common pattern of reproduction prevailing among rural women in most of the developing countries, it is clear that women are often in the state of either pregnancy or lactation from the late teens to the early forties. The non-pregnant, non-lactating status counts for a relatively short time out of their total reproductive cycle. Under such circumstances, major ingredients for action toward improved nutritional status are income, food, education and family planning.

Obviously, family planning, especially **better spacing between pregnancies** and smaller family size, would have a significant effect in reducing the physiological demand and, therefore, the food needs among young women. Moreover, women will have more time and freedom for child care and productive work.

Health sector by itself **cannot** assure primary prevention i.e., preventing malnutrition from occurring. However this sector **can** assure: (a) secondary and tertiary prevention of malnutrition i.e., preventing and remedying the consequences of malnutrition (b) advocacy role in order to influence other sectors towards an effective intersectoral action, at primary and other prevention levels and (c) use nutrition activities as spearhead and entry point for national health development.

In general, secondary and tertiary prevention can be achieved through (a) nutrition care through primary health care delivery system (b) fortification of foods (c) nutrition education (d) nutrition surveillance.

The GOBI-FF mix concept presents an example of focused mix of measures with good prospects for delivery on a large scale, relatively low level of recurrent costs, and is to be seen as the first in a sequence of steps in the long way we have ahead in operationalizing the primary health care concept.

Therefore the immediate **challenge** is to generate a global movement in order to bring about large scale action on a nucleus of measures which are most likely to be doable and affordable in a self-reliant and community-based fashion. In due course, this movement will be recognized as another revolutionary breakthrough, this time in health. How can it happen?

Guiding Principles

There are a number of **guiding principles** which need special attention:

First, community involvement is an important requirement for effective action and rapid expansion. Participation occurs when a community emotionally or economically relates to an issue. In the primary health care approach, child growth and health is one of the issues around which mothers become highly emotional and therefore will be ready to organize for action in the home and community to save children.

Second, participatory process in its full sense requires participation from **policy makers, scientist and people**. It is the **harmony** between these three sides which becomes highly critical.

Third, movement to save children is a process and the immediate purpose is to strengthen and accelerate this process. For this purpose, a **critical mass** of motivated and skilled individuals and institutions to represent the community, the scien-

tists and the policy makers should assume the leadership.

Fourth, in strengthening and accelerating the process, special attention should be given to the **national and local dimensions**. In working at the local level, the main strategy would be to focus on the best use of opportunities in removing constraints and bringing about positive impact on the problem and at the same time generate new lessons on practical and locally feasible solutions. Care is needed in order to assure that design and development of local experiences do not create isolated artificial experiences with little or no chance of replication.

Eventually, it is the aggregate of the local experiences that would help to develop a realistic national capacity necessary to support local experiences and continuously integrate a synthesis of new experiences into the national strategies. Leadership at the national level follows the third principle.

Fifth, it is important to be cautious about the rate of expansion and extension of new experiences. There is a lot to be learned about the speed of scaling. Obviously, the speed would be different under different circumstances.

Sixth, needs for attention at various levels differ. At the national level, it is change of priorities in favor of health and good nutrition for all especially at-risk population. At the middle level, it is better management i.e., people oriented management, improved organization and staffing and decentralization of power and capacity for initiatives at this level. At the local level, it is adequate technical support to community movement.

Seventh, within such a frame of thinking the science, policy and bureaucracy should be prepared to change their role from a leading function to a supporting one.

Eighth, the world does not know enough about details of realizing many concepts embodied in this approach and its guiding principles. Therefore, applied research will be needed in order to analyze and synthesize knowledge, as it accumulates, in order to:

- a. influence priorities at the national level;
- b. to strengthen middle level management and technical support to local action;
- c. to add an element of applied science to the community-based action which may be called a **movement**;
- d. Develop a more effective bridge and harmony between science, policy and public.

One suitable mechanism to support applied research is to establish and strengthen a network of international/ national research institutions.

The Ultra Poor and their Needs

Ninth, the bottom twenty per cent of the poor which is now being called "ultra poor" is very difficult to reach and the current development efforts have often bypassed them. The ultra poor are quite unlikely to become motivated and mobilized around emotional issues such as child health and growth. Their immediate felt needs are more centered around quick remedies for their economic hardships. Furthermore, they are

too poor to be able to share the costs of meeting the health needs of their children and themselves.

Therefore, many experts have voiced the opinion that in very poor communities the initial stage of action should be organized around poverty reduction approaches. This is the **second concept** that was referred to earlier (page 5) i.e., for the ultra poor initial take off needs to be brought about through modest economic and technical inputs which would stimulate and motivate the community for action and would set the stage for addressing child health issues. Once the economic injection is made and mobilization is stimulated, then the community concern for health and other social issues will easily follow.

As an analogy, the opportunities so far opened out in Green Revolution are being widely utilized because of a strong profit incentive. For the very poor the profit incentive needs to be built into the concept of life saving or otherwise the profitability of life saving of children needs to be analyzed, articulated and communicated.

The issues of reaching the ultra poor, integrated action on poverty and disease and profitability of a simple low cost mix of action (such as GOBI-FF) need a great deal of research. There are plenty of examples of income generating and poverty reducing schemes. However, there are very few experiences where credit and economic injection has been effectively applied as an entry to mobilization and organization of rural poor including specific focus on women.

In recent years two interesting cases of community-based, poverty-oriented approaches have been in the making in Nepal. In these approaches increased income and improved availability of food is sought through institutional credit, effective communication and participation of small farmers and women. The stage will then be set for the community to address the health issues. (See page 19)

Tenth, when the poor in the world are entitled to adequate food and particularly when the rural poor find the opportunity to produce more food, there will be sufficient reason to be optimistic about an effective attack on world hunger. It is important to recognize that food problems can ultimately be addressed through the **food system**. A promising step towards addressing food and poverty problems is the new concept of **food security at sub-national levels**, where food security for people is the central concern. The operational mechanism for this concept is **national food strategy** which proposes a stepwise approach to the national food issues and aims for integration of policy, technology and resources at national and sub-national levels and puts production and consumption/nutrition issues at equal focus.

Given the current thinking, the national **health sector strategy** within the primary health care approach and the national **food strategy** present a number of common features. They both propose focused stepwise approaches to major issues; emphasize priority attention to the needs of the poor and the vulnerable population; recommend low cost technology and participation of the community in the process of action. How-

ever, entry through the food system most probably carries stronger attraction so far as profit incentives, community felt needs and access to some local organizations and skills are concerned.

Eleventh, in the immediate future the world has a realistic opportunity to face the crisis of dying children through a global movement to generate a health/child feeding revolution. Looking further into the future, the world may well be the witness to another breakthrough.

Perhaps before the end of this century another scientific and technological breakthrough in food and agriculture could come with no less importance and significance than the Green Revolution. This will have to be a breakthrough in orienting food and agricultural technology to the needs and abilities of the rural poor in order for them to increase food production and improve their economic and health conditions.

This breakthrough will come when "the crisis of hunger" becomes a matter of serious concern just as the crisis of production has been over the last two decades.

The global understanding and concern over hunger will be strongly enhanced when an effective, conceptual and operational **bridge** is built between the **health** and **food systems**. The need for it is only partially understood within the scientific and policy circles. The community can also play a major role in its establishment. The final answer will be a matter of joint effort on all fronts.

III. Some Major Lessons of the Past

Green Revolution

About twenty years ago the world was going through a period of serious anxieties due to an acute food crisis. The international community responded to this crisis quite effectively. It was the combination of a strong determination and miracles of a scientific and technological breakthrough that brought about an unprecedented increase in food grain production in many developing countries. This miracle was named "Green Revolution". The term "Green Revolution" was coined by journalists and not scientists.

It is an example of major scientific/technological breakthroughs of this century and was brought about by a network of international research institutions in agriculture. At that time the world was in need of large quantities of food to be produced as fast as possible. The Green Revolution helped to satisfy these needs quite adequately.

As a result, dramatic increases in food production were achieved in many countries such as India, Mexico, Colombia, Pakistan, etc. There has been a long debate on the distribution of the benefits of the Green Revolution.

There is no doubt that the Green Revolution has had far reaching effects on many dimensions of human life. It is also clear that distribution of its benefits has been quite uneven.

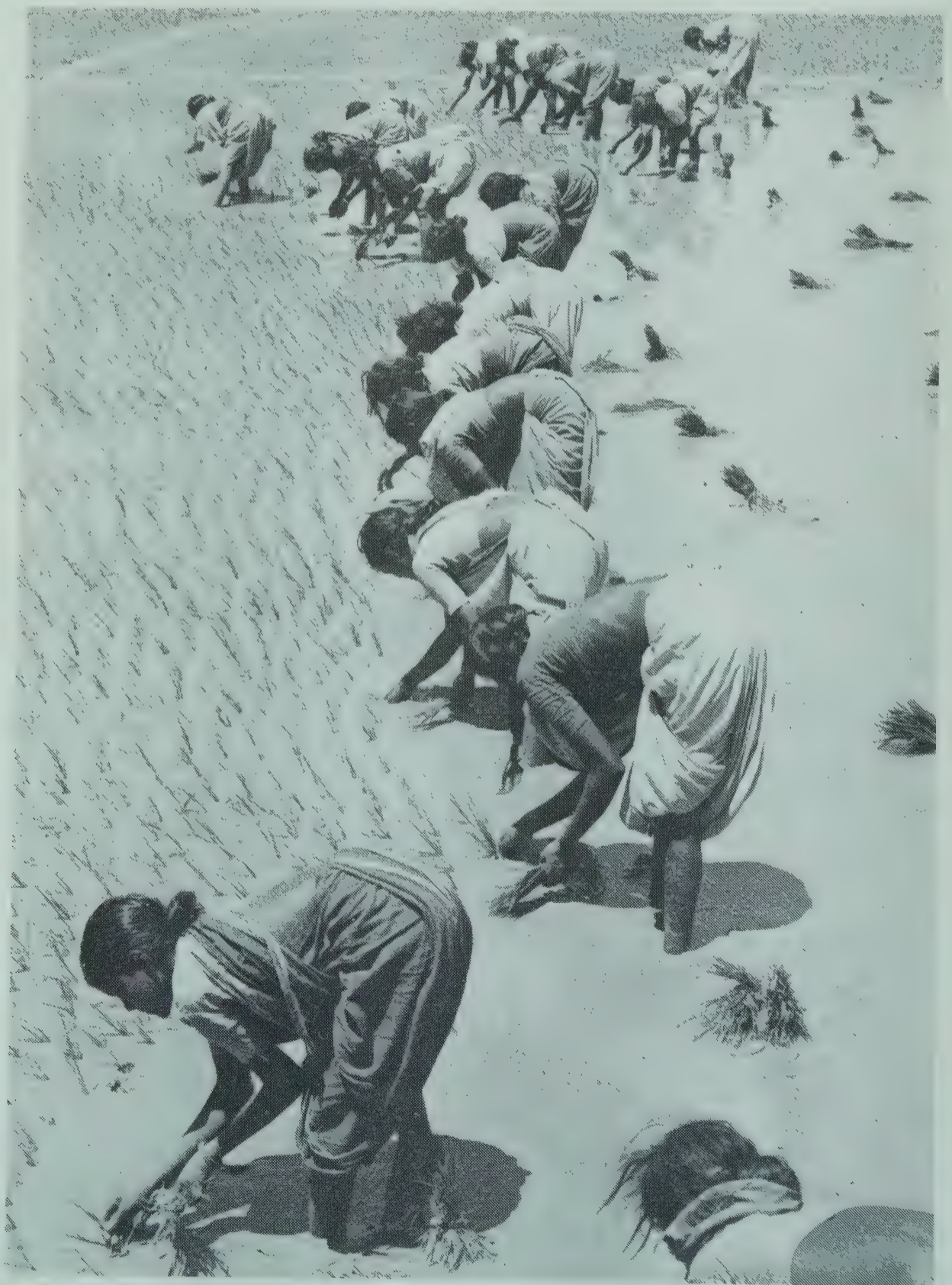
It is well understood that expanded food production by itself

should not be equated with improved nutrition. The major question is how far and in what way food entitlement of the poor has been effected by production?

Direct nutritional effects of Green Revolution are not clearly known. However, there is ample evidence that households containing malnourished have benefitted to a significant extent. It is also clear that the relative increase in income of the poor as a result of Green Revolution has been larger than the better off. Of course, the better off had much greater benefits in absolute terms.

Increased food production resulted in significant decrease in prices; and therefore, food entitlements of the urban poor improved substantially, and most probably the malnourished benefitted more than the better off households.

In Colombia the production of rice doubled in four years and prices fell by 30%, such a sharp decline in prices brought about dramatic improvement in consumption potentials of the urban poor.



In India and Pakistan there was a cutback in food imports and hence a less dramatic price effect. Green Revolution in India and Pakistan resulted partly in import substitution and partly in price reduction.

Among the side effects of the Green Revolution, crop substitution and increased monocropping have been identified; and sharp decline in production of pulses has been a major cause for concern. However, it is clear that the total supply of calories, protein and essential amino acids per unit of production increased and the net result has been a positive gain. Also a significant decrease in cost of production has been documented.

Green Revolution also generated considerable increase in **rural employment**, which led to improved food entitlement of the landless poor; and with some exceptions, labor saving technology came much later after the available labor had been absorbed.

Now let us look at the situation on the producer side. In situations where land distribution and access to production inputs were highly uneven, then the Green Revolution had an amplifying effect in worsening the already uneven distribution. On the contrary, wherever distribution of land and resources were reasonable, Green Revolution did not aggravate the situation. Therefore, the rich became richer but the poor did not necessarily become poorer.

So far as nutrition considerations are concerned, there is need for poverty-oriented research in food and agricultural technology; and in that context it will be necessary to look at the crops and technology adapted to the needs and abilities of the disadvantaged rather than exclusive priority to increased output. This is an example of how research and technological breakthrough may affect the health and economic life of the poor. It is important to recognize that the major driving force behind wide application of the Green Revolution has been **profit incentives** both by large farmers and small or large landholders.

Food Distribution in Developing Countries

Over the past few decades millions of dollars have been spent on supplementary feeding programmes for women and young children in many developing countries. The presumed objectives of such programmes, although not always simply stated, is to improve nutritional well-being or to prevent its deterioration among the target population. In recent times many planners, administrators and scientists are asking what good do these programmes do for child nutrition and how can they be made more effective?

A recent review of knowledge in this field has shown that ongoing food distribution programmes directed towards young children are rather expensive for the measured benefits. However, there is considerable doubt whether the benefit measured as physical growth and development is either the total benefit to the family and community or even the most important benefit.

Anthropometric improvement has been surprisingly small which may be explained by relatively low levels of average net supplementation. The children with the greatest apparent weight deficit (third degree malnutrition) at entry into a programme tended to show the greatest response to supplementary feeding. When a food distribution programme significantly reduced the prevalence of severe malnutrition, there appeared to be an ac-

companying reduction of morbidity or mortality from infectious diseases. There seems to be a synergistic effect of combined feeding and health care programmes. There is suggestive evidence that recurrent illness and accompanying anorexia may limit appetite and voluntary food intake.

Increased physical activity has been demonstrated as a response of young children and adults to additional food intake. This is a very important observation in view of the fact that increased voluntary activity among children may effect cognitive development. The available information suggests that the observed growth response accounts for only a small part of the net increase in energy intake derived from supplementary foods.

The "missing energy" may be producing unmeasured benefits such as physical activity, de-adaptation of basal metabolism and changes in body composition. Some of these benefits may have greater significance than growth per se.

Most of the feeding programmes have had considerable "leakage". This is the amount of food shared by the non-target individuals or displacement of food that would have been consumed otherwise. In take home programmes sharing may account for 30% to 60% of the food distributed. In general, the net increase in intake by the target recipients was 45-70% of the food collected and the net effect in closing the calorie gap has been relatively small due to low coverage, participation and ration size.

"Leakage" has been generally seen as an undesirable source of inefficiency and no attempt has been made to trace the effects of this food which forms a major part of the distribution. The total costs of programmes intending to provide 300-400 Kcals per day were about US \$15 to \$25 per beneficiary per year (1976 dollar equivalent). There has been little information on the educational impact of food distribution programmes and no judgement can be made about the benefits.

So far as potential improvements are concerned, the greatest impact would most probably follow from measures which enables programmes to reach children 6 to 24 months of age. It is quite uncertain whether such an objective can be achieved without directing the programme to the family as a unit.

Although integrated feeding/health care approach is seen as desirable, other delivery channels should be tried if the health care system does not reach those in greatest need.

If there are possibilities for expansion to the point of substantial impact, it is essential that their true objectives are defined and that the programmes be designed and implemented accordingly. The objective may be to use such programmes as an instrument of redistribution of effective income/community development with the **community** as the "target" or as a specific form of supplementation targeted towards **high risk individuals**. The design would be completely different for these two goals.

Finally, it is important to note that in many, if not all communities, populations are now in equilibrium with their unfavorable environment including chronic underfeeding as the result of social and other adaptations. A food distribution programme may disrupt such adaptations while producing improvements in health conditions. Therefore, reasonable assurance of continuity of the feeding programme will be required.

Food Marketing: Brazil's Experience

The economic benefits of mass production and wholesale/retail food marketing accrue mainly to the better off consumers who buy at supermarkets in large urban areas. Low income consumers, particularly in rural areas, pay higher prices for relatively poor quality since food retailing is small-scale, highly fragmented and not efficient. The Brazilian Food Company (COBAL), a non-profit government enterprise, in 1975 initiated a pilot programme called Rede Somar to correct this market imperfection. Designed to reduce prices of basic foods to consumers in low-income urban and rural communities, the program purchases as much food as possible from small rural producers. It thereby provides stable, expanding markets at fair rates of return while offering small independent retailers regular access to supplies at low prices and under favorable conditions. Achievement of these goals involves reform and modernization of the wholesale marketing system passing on to the final consumer the resulting economies of scale. Lower operating costs permitted retailers to reduce their mark-ups, compensated by the higher turnover resulting from expansion of sales volume to a larger consumer clientele.

During the past 21 months, a World Bank-assisted nutrition project has supported Rede Somar expansion to seven states of Northeast Brazil where severe drought conditions have persisted for three years and where population outside the few principal cities is widely dispersed. Based on the National Expenditure Surveys (ENDEF) only 20% of the population in the Northeast has adequate diets, 16% of the population has deficits of up to 200 calories, 34% of the population suffer from deficits in the range of 200 to 400 calories and deficits of more than 400 calories affect nearly 30% of the population. By December 1981, over 2000 small independent retailers in the Northeast were affiliated with the Rede Somar programme and over 1,000 additional retailers have been registered but could not be covered because of existing limitations of Rede Somar's infrastructure. Rede Somar operations and pricing policies have brought fierce competition into the food retail market and have led to substantial reductions of previously high retail margins. Although Rede Somar's pricing policy aims at covering costs as closely as possible, not all operational costs can be rolled over to the rural consumers of the Northeast, and some have to be met from profits from urban wholesale and retail operations within the region.

Based on preliminary evaluations, the resulting benefits to consumers are substantial: Prices for basic food items have been reduced by an average of 10%. It is estimated that, among direct consumer beneficiaries of Rede Somar, a 10% price decrease could generate increase in per capita consumption of up to 100 calories per day among families in the four lowest income brackets. Not only does this programme appear to be nutritionally effective, but it is also affordable. An economic analysis undertaken by the World Bank shows a rate of return of 53%. Sensitivity analysis shows that this project would be very robust under even extreme assumptions on cost-overruns and benefit shortfalls. However, there are several questions which do require further investigation and analysis. Although the price decline could generate an increased consumption of up to 600 calories per day per family. How far the additional calories would benefit the pre-school children and pregnant and lactating women? How much more effec-

Home Gardens: Experiences of Indonesia and Colombia

tive would the market have to be in reducing further consumer prices and insuring adequate nutrition of vulnerable groups under present intra-family distribution patterns? What are the technical and managerial feasibilities and investment requirements of achieving these efficiencies? These are among important questions which need further examination. It is important to recognize that this experience is still in an experimental stage and further examination and evaluation is needed before final views can be formed.

Promotion and extension of home gardens as a means to improve family diet among the poor have been supported by the World Bank in Indonesia and Colombia. The home and village garden program in Indonesia was expected to establish gardens in 18,000 village homes in the course of 4 to 5 years to produce nutritious fruits and vegetables, mainly for home consumption and partly for sale to augment family incomes. It also envisaged the setting up of one seed model garden in each village through community efforts on communal land. Extension services, seeds, fertilizer and other production oriented inputs and services were offered for an initial 3 years on a grant basis to establish the necessary demonstration effect. Thereafter, it was intended to provide inputs on credit. In 1981, after 3 years of operation the program reached 12,000 homes. However, participation has declined subsequently in the project area, although the programme expanded rapidly outside the Bank-assisted project. Only a limited number of seed gardens could be established often due to lack of suitable community land.

Preliminary evaluations indicate that the programme could not reach the most vulnerable families, as originally intended. Primarily because they did not have enough land even for small home gardens. Most participants were, therefore, among the relatively well to do. Improved technology was widely adopted, but only half of the area available was cultivated for home gardens by both participants and non-participants. The majority of participants consumed about 60% of their vegetable produce and attempted to market the rest. While the program succeeded in its objective of increasing the yield of fruits and vegetables and their consumption, a comparison of participants and non-participants indicated no significant difference in nutritional status.

9m/ Both the Indonesia and Colombia experience confirm that nutritional improvement alone is not a sufficiently strong incentive for many small holders to take up increased production through home gardens. Since most participants in these programmes had already some form of food production prior to participation into the programme, the additional yield increase derived from relatively small plots did not provide sufficient marketable surplus. The minimal income incentive therefore constrained programme expansion. As the Colombian experience has shown, the introduction of small livestock into the programme can help to overcome this constraint. Production of both food crops and small livestock for the market seems therefore imperative to build into the programme the needed income incentive to small farmers. However, effective methods of overcoming the marketing problems created by small volume of perishables and livestock and diversified quality of production should be the subject of more

explicit consideration. Obviously, cooperatives and associations are important, but generally few of the poorest farmers participate in such activities. Poor infrastructure is frequently cited as a problem, but their quantitative impact is not all that clearly identified. What has been learned is that public sector fixed investment in marketing should probably be minimized, encouraging the private sector to increase the efficiency of its marketing in ways which benefit both producers and consumers. The difficulty remains as to how to define the appropriate minimum of public investment to best induce needed private marketing interventions serving the rural poor.

Before supporting any large scale expansion of home gardens



programmes, a number of operationally important questions need to be answered. What is the nutritional impact in terms either of increased family consumption of home-produced foods or of food purchased with income from sales of an increased marketable surplus? What impact does the programme have on food consumption of pre-school children and pregnant or nursing women? From a technical-managerial perspective: (a) to what extent are existing technological packages appropriate to the particular farming conditions of these beneficiaries; (b) to what extent do existing marketing arrangements limit returns to the producers in the programme? (c) How do the costs of administering the programme, including credit, differ from those of other small farmer programmes? How permanent are production, income and consumption changes initiated by the "home gardens" programme? The extent of participation of farmers after subsidies are no longer available? To what extent does the programme generate sustained momentum after the full range of initial services tapers off?

Credit and Rural Mobilization/Experience of Nepal

Community participation is considered as an essential element in primary health care approach. However, under conditions of severe poverty "health" is not necessarily the most effective stimulant of the participatory process. Under such circumstances health and nutrition are often peripheral to the immediate priorities of communities and governments. Nevertheless once community involvement is stimulated and sustained, these social issues can be more effectively addressed.

Credit extension and agricultural development programmes, if properly designed and implemented, can provide a framework for social development. Often these programmes have better coverage and are more central to the interests of governments. Within this frame social development can be advanced to a considerable extent through modest economic and technical inputs which will effectively stimulate and motivate the poor and disadvantaged to organize themselves and initiate a self-reliant movement directed at solving their common problems associated with rural poverty.

In recent years two very interesting examples of community-based, self-reliant and poverty-oriented approaches have been in the making in Nepal. Nepal is a very poor country. Annual per capita income is \$140, literacy rate is 20%, life expectancy 44 years, infant mortality 176% per thousand, and 60% of the population is below poverty line and average family in the hilly areas can only produce 225 days of their annual energy needs. Production in agriculture and allied sectors is responsible for 80% of household income and 85% of the agricultural production is used for auto consumption. About 57% of the labor time expended in agriculture is provided by women. When home production and outside earnings are taken into account, women actively contribute 50% of the total family income, while men contribute 44% and children of 10-14 years about 6%.

The first experience in addressing health and nutrition problems in Nepal originates from a project called "small farmers". In this project, access to easy credit has been applied as an entry point to organization and mobilization of the small farmer and the rural poor in the villages of Nepal.

The main objectives of this project are increasing income and improving standard of living among the low-income small farmers, the landless and the disadvantaged. This approach has been financed by the International Fund for Agricultural Development (IFAD) and proved to be successful in organizing the rural poor around economic activities and adaption of the local delivery systems to the needs of the rural poor.

Initial evaluation has proved this approach to be socially acceptable and viable and already has reached a considerable scale. UNICEF's assistance focuses on strengthening the social aspects of development. Focus on health and nutrition includes improvement of infant feeding practices, home food production, production of weaning foods, oral rehydration salts, sources of local fuel for domestic purposes, water and sanitation, subsidies for biogas, community wood lots, fuel efficient stoves and improved food processing, women's activities, adult literacy, day care centers, etc.

A simultaneous approach to social and economic aspects of rural life is expected to be quite effective in improving state of health and nutrition of women and young children. It is also interesting and important to know how far nutrition education may be effective in increasing food production and consumption, especially in relation to appropriate use of the credit. The final outcome of this approach will be known after sufficient evaluation in the near future.

The second experience is in the making through promotion and provision of institutional credit for women. In this project, easy access to institutional credit is being applied as an entry point to provide opportunities for women to play a more active role in social and economic development in Nepal. The purpose is to weaken inside/outside dichotomy between women and institutions in order to improve their well-being and make their work more productive. The project aims for such objectives through easy access to institutional credit, improved agricultural extension and health care. Major constraints in this approach include women's illiteracy, lack of awareness, fear of approaching bureaucracy, lack of collateral and shortage of time.

There is need for better understanding of the household behaviour on food acquisition and determinants of mother's behaviour in child feeding and care, and relative decision power and role of different household members on nutrition, and feeding and health issues in different cultures.

In this approach improved availability of food and income is sought through institutional credit, improved communication and group formation, and a sustained community involvement. **One important effect that group formation creates is demand for health services** which in turn influences the expansion and outreach positively. Women extension officers can also be used as effective agents for child feeding and nutrition care.

The novelties of this approach:

First, women become the central focus as actors and beneficiaries of development and therefore excellent targetting mechanisms for a mother-child focused approach.

Second, the priorities for action are directly poverty oriented and therefore more likely to meet with the immediate felt

Rural Credit and Health Care/Cases of Brazil and Colombia

needs of the women and their families in poor communities.

Third, this approach should begin to provide increased ability to share the costs for better health, nutrition and education, and especially the fact that a larger portion of women's income is likely to be spent on child's food and health.

Fourth, it gives women a chance to participate in the village economic activities on a viable and significant scale.

Fifth, it is an example of local initiative without dependence on international assistance.

Results of this experience will be documented in the next few years.

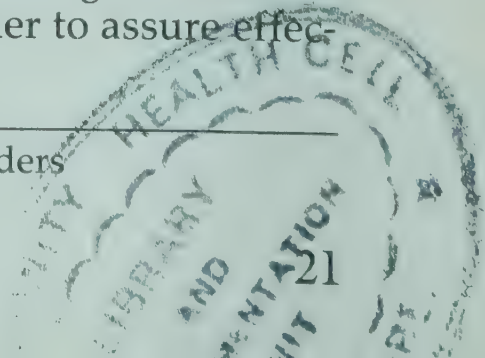
While many development projects are targetted towards low-income farmers, there are many who are easily bypassed. They are tenants, sharecroppers or owners whose farm sizes are not economically viable. The World Bank-assisted nutrition projects in Brazil have attempted, at least on a pilot basis, to deal with the production/consumption problems of these nutritionally most vulnerable groups.

In Brazil's Northeast, small economically nonviable farmers, sharecroppers and tenants were provided for the first time with: (a) access to rural credit aimed at expanding agricultural production and incomes, and (b) to rural primary health care services including nutrition education. This approach was expected to produce measureable improvements in the nutritional status of the target population.

The operational lessons and achievements from these pilot interventions are important for any further work in addressing the production/consumption linkages of the rural poor. In general, implementation of all these production/consumption oriented interventions has been hampered by initial delays resulting from lack of institutional experience and other problems associated with projects in any new area. On the other hand, once mounted, these interventions exceeded the expected rate and levels of coverage. In Brazil, Indonesia and Colombia, pilot interventions have been recently expanded, with support from government's own resources, into fully operational programmes.

In Brazil, the PRAMENSE* pilot programmes reached nearly 7,000 beneficiary families in some 400 production or extension groups. It allowed the testing and adoption of a new simplified credit system and the provision of easy credit to groups of very small farmers (including sharecroppers). These techniques have subsequently been accepted by the Bank of Brazil and replicated elsewhere in the northeast. Within the project area there was significant interaction between agricultural extension and health/nutrition workers in the field which permitted a reasonable integration of project activity. The project experience showed that it is possible to mobilize significant community resources to improve health care, with some 30 health posts being constructed by community health associations formed under the project. But it also pointed out the critical importance of having an effective training, supervision and supply system in order to assure effective

*Programme of rural production credit for small holders



tive delivery of services. The project resulted in an increased use of animal traction for ploughing, a limited increase in the use of chemical fertilizers, a generalized increase in the demand for selected seeds, a significant increase in on-farm storage facilities for beans and maize, and an increased use of credit.

The project's evaluation highlighted the importance of animal production in the survival strategies of small farmers and even sharecroppers, though it was intended only to promote crop production. It was quickly learned that purchase of animals is an appropriate strategy for accumulation and risk reduction because animals can be sold, consumed or driven to another location when crops fail. This experience suggests that rural development projects intended to benefit small farmers and sharecroppers should include credit for livestock as well as crop production. In areas subject to significant risk of drought, the project clearly demonstrated the importance of food crops suitable for semi-arid conditions and of crop insurance (PROAGRO) as a stimulus to the use of modern inputs purchased on credit. The project experience also highlighted the limitations of any rural development strategy for Brazil's Northeast which does not provide access to land for the rural landless.

The project's nutritional evaluation confirmed the findings of the National Household Expenditure Surveys (ENDEF) that calorie rather than protein shortages are the binding constraint in the vast majority of cases where food intake is deficient. It likewise confirmed that the elasticity of calorie consumption with respect to income is very low (ranging from 0.1 to 0.3). This happens to be



Nutrition through Primary Health Care: Recent Experiences

true even for very poor families and may be explained by many other competing demands for income. One interesting finding was that when food is scarce (as in the drought year of 1980), the presence of the mother in the home has a significant positive impact on nutritional status, presumably by affecting the intrafamily distribution of food.

The Colombian Government embarked on an ambitious pilot effort in 1978 to increase food production and incomes of small farmers in selected poverty areas covered by the national food and nutrition programme. Around 24,000 families now benefit from a combination of extension services and initially subsidized inputs and credit administered through various Government agricultural extension agencies. Initial credit and inputs of seed, fertilizer and breeding stock or poultry for direct marketing are offered at a total 50% subsidy on a seasonal basis. The subsidy is reduced to 25% in the following season and to zero thereafter. Title to the land is not a prerequisite for the loans which average around US \$200. Repayment rates so far are reported to average more than 95%. An economic evaluation of the programme is now in draft form and is expected to be completed in the near future.

It is important to remember that rural credit in Nepal is directly linked to rural mobilization (group formation) and organization. In this case, the priority needs to be satisfied by the credit are decided by the group. Apparently this approach has not been emphasized in the Brazilian and other experiences. It would be interesting and important to know whether such differences in approach do make a difference in outcome.

Over the past two or three decades, the health care system has been one of the most common channels of entry to problems of maternal and child malnutrition in the developing countries. Overall analysis of the experiences in this period has more often shown limited success, the reasons of which have been the subject of a heated debate over the last few years.

Health care services have had limited coverage and have been more accessible only to the urban middle and lower classes. They were more curative than preventive oriented, have had a low level of efficiency and often bypassed the ultra poor and nutritionally at-risk population. Furthermore, the needy and at-risk have different priorities and felt needs. They neither can share the costs of services nor afford the time and effort to utilize the services regularly.

The WHO/FAO/UNICEF applied nutrition approach was quite comprehensive but often lacked community involvement and replicability potential. (The village nutrition programme in the Philippines adopted a vertical line of operation and did not integrate itself into health and rural development.) This programme was fairly successful at the pilot level but failed to succeed on a national scale because it adopted a top-down approach with very little local initiative and participation included. The experience in Indonesia has shown a much better record of replicability. A major concern in Indonesia is that the programme did not reach the bottom 10%, absolute poor. The village nutrition approach in Indonesia has been quite effective in popularizing the child growth

concept through the use of scales and growth charts. However, the programme has not been as effective in improving child feeding and nutrition.

The case of integrated child services in India presents a fairly broad approach to child nutrition and health, and a few external reports make it appear as successful. However, the costs are not sufficiently known.

In some countries such as China and Vietnam, malnutrition and diarrheal diseases do not appear as serious problems. Obviously a complex of social, economic and cultural factors have made this possible. The important fact is that extension of activities geared to disease prevention and promotion of health has become a reality in these countries.

The lessons of the long experience have now convinced all concerned that future action against world hunger and malnutrition would have a chance of success only if it is integrated in development process, is participatory, self-reliant, has the capacity to reach the poor and attacks the problems in a preventive and promotional fashion and is flexible and specific to local problems.

Specifically, there is need to know more about the following:

- a. Effective methods of reaching the poor and especially the poorest.
- b. How to reconcile the differences in priorities and felt needs that often exist between the policy makers, scientists and people.
- c. How to take a good number of successful local experiences and replicate them into regional, sub-national or national action.
- d. How fast it is advisable to expand, and how to decide on a reasonable course of action.
- e. How to approach the problem among the absolute poor who cannot share the costs unless their poverty is considerably reduced. What are the realistic possibilities and channels for action toward this purpose?
- f. In the meanwhile how effective will our efforts be in addressing problems of maternal and child malnutrition while the poverty is at its peak and knowing that chances for significant reduction of poverty in developing countries within the next two decades seem to be quite limited.

In recent years major progress in theory and practice of primary health care has opened new horizons which offer promising potentials for overcoming many of the constraints of previous approaches.

The experience in Thailand over the past decade presents a valuable example of where the country approach has been relatively effective in operationalizing the concept. A brief discussion of "Thai" experience is given below.

The "Thai" Experience in Primary Health Care

Thailand like many other developing countries has serious constraints in meeting the health needs of its population. Although 5% of the national budget is allocated to health, 65-80% of this budget needs to be spent on expansion, improvement and maintenance of health services primarily on the curative side. Only 15-



30% of the population is being serviced by these facilities. The recipients are those who can afford to pay for the care and are primarily concentrated in the urban areas and physically close to the facilities.

Traditionally within the rural poor areas of Thailand, the older, more senior and more skilled villagers effectively helped and advised those in need so far as health complaints were concerned. Within the last 10-25 years the primary health care "Thai style" has been built around this tradition through identification, training and support of two types of local health agents. These are called village health volunteers (VHV) and village health communicators (VHC).

The village health communicators are selected from those who, in a natural process of human clustering, happen to be a key member of the group dynamics. Through stimulation of VHCS the community is helped to organize itself around identification of priority health issues followed by organization for action with assistance from VHV and the government health officials.

The VHV's have shown to be effective in tackling around 60-65% of all health complaints.

The primary health care system (PHC) in Thailand is organized around the following concepts*:

1. PHC is defined as Public Health Services of the community, by the community and for the community.

*Taken from paper by Nandusta, A. (supporting document II)

2. Represents a supplementary system extended from the system rendered by the state and with cooperation of the community.
3. Equipping the community with the necessary capabilities to solve its own health problems through community participation and organization.
4. Comes into being upon recognition, and will of the community and government will play a supporting role in provision of technical and financial assistance.
5. Community involvement includes priority identification, and contribution may take the form of funds, labor time and cooperation in other forms.
6. Activities must interact with other activities such as agriculture, education and community development.
7. Appropriate technology in terms of economic, social and cultural viability and effectiveness in problem solving should be utilized.
8. Harmony with existing institutions and norms of community life should be maintained.
9. Flexible patterns of work consistent with the nature of the problem and social, economic and cultural environment need to be adopted.
10. Must relate to the public health services especially for supervision of referral services, continuing education and provision of health information.
11. Essential components of PHC are as follows:
 - health education
 - control and prevention of local endemic diseases
 - environmental sanitation and provision of clean water supplies
 - immunization
 - promotion of food and nutrition
 - treatment of simple illnesses
 - mother and child health and family planning
 - provision of basic household drugs

Food and nutrition activities stress child weighing, growth monitoring (road to health approach), preparation of weaning foods, nutrition education, small plot food production and home gardens, and treatment and prevention of diarrheal diseases.

Most of the costs are met by the community especially through establishment of nutrition coops and drug coops. The nutrition coops concentrate on production and sales of weaning foods.

The external assistance around US \$1000 per village has been provided, which supplements the contributions made by the community in meeting the costs of activities, especially the initial investments as required. Already one third of physicians in the rural areas have been exposed to this concept and expansion of the scheme is faster than expected. The government provides support when more than half of the population have joined the coops.

It is too early for comprehensive evaluation of benefits. However, there is ample evidence in villages where the scheme became effectively operational that third degree malnutrition has been reduced to almost zero level within a period of one year.

Recording of infant mortality seems to be almost impossible in the villages of Thailand, and improvements in child growth and other indicators can be assessed later.

Success of this programme heavily depends on the proper understanding and effective functioning between the community and the health authorities. While the community is clearly doing its share, the health authorities have serious difficulties in modifying their role to a supporting function. As a matter of tradition, the Ministry of Health has always played a directing function.

The villages so far have been selected on the basis of their motivation and natural experience with community organization. Therefore, replicability potentials are not entirely clear at this stage.

This scheme has successfully worked in Thailand in villages where the minimum of resources are available for financing simple health care at the village level and the community is willing to pay for it. Therefore chances of replicability will greatly depend on motivation and availability of resources. **It is not clear how poor a village would have to be before this approach becomes unaffordable.** It is very likely that in poorer villages with less satisfactory records of motivation and community organization, this approach will face major difficulties. **How many villages of this type exist in Thailand is not known, and what should be the answer in such circumstances is an important subject for future research.**

The rate of extension of this scheme has been faster than expected. Still the difficult question remains, how fast schemes of this nature should and can expand while adequate standards of management, coordination and monitoring are maintained.

Obviously, the "PHC Thai Style" and its nutrition component have many strengths. The most important of which are community participation, partial financing of costs, better chances of replication, better coverage and sufficient attention to prevention of disease and promotion of health.

This is by all means an outstanding example of feasible, affordable and effective experiences in addressing nutrition and health problems in the community.

IV. Public Health Nutrition: A Health Sector Strategy

Potentials for Action through Health Sector

What aspects of hunger and malnutrition **can** or **cannot** be effectively addressed through health sector and how?

The ultimate purpose in the fight against hunger and malnutrition is primary prevention i.e., to prevent it from occurring. In working towards this goal, an effective intersectoral approach is required. However, the following can be accomplished within the health sector:

- (a) secondary and tertiary prevention of malnutrition i.e., preventing and remedying the consequences of malnutrition;

(b) work with other sectors towards an effective intersectoral attack to control problems of hunger and malnutrition at primary prevention level;

(c) nutrition activities within health sector can serve as a spearhead and entry point for national health development.

Secondary and tertiary prevention of malnutrition can be achieved through the following four channels:

1. Nutrition care through primary health care delivery system (PHCDS). Monitoring of growth of infants and young children in a "road to health strategy" is recommended as the most effective entry point for delivery of nutrition care within PHCDS. Other activities of immediate relevance include improvements in infant and young child feeding; prevention, treatment and rehabilitation of nutrition deficiency diseases;



prevention and treatment of infectious and parasitic diseases; better pregnancy spacing and improvement of maternal nutrition among the population at-risk and low-income families.

2. Fortification of foods, water and possibly other carriers which would contribute to the overall availability of micronutrients to the at-risk population.

3. Nutrition education inside as well as outside the health sector.

4. Nutrition surveillance i.e., collecting, compiling and coupling of data relevant to decisions which would affect the community and the nutritional conditions of the population.

The following three kinds of nutritional surveillance have been identified:

4.1 Timely warning and intervention to avert crisis;

4.2 Surveillance for programme management;

4.3 Nutrition surveillance for policy and planning.

Unfortunately, there are a number of misconceptions around primary health care and nutrition which need to be cleared at all levels.

First, in many developing countries primary health care is equated with health sector.

Second, the middle level administration in developing countries often equates improved nutrition with increased food production through commercial and industrial means.

Third, the assumption is that enough is known about biological determinants of nutrition in order to be able to know what to eat to be healthy.

Fourth, primary health care strategy assumes that local resources are usually adequate to obtain improvements in nutritional status or prevent malnutrition in the community.

Fifth, decisions on food and nutrition would improve if the truth is known. Therefore, education and transfer of knowledge is sufficient for change.

Sixth, in a final synthesis, improvement in nutritional conditions is very much a matter of positive changes in behaviour among the at-risk groups and increased availability of resources. A common opinion among some highly placed members of the health profession has been that the health sector can play a very limited role in producing nutritional improvement as long as it does not completely understand biology and behaviour and does not have a decisive role in increasing resources.

The truth is that:

First, primary health care is a broad multisectoral approach to community health as a major outcome of national development.

only **Second**, improved nutrition is the result of improved food entitlements, where access to adequate food on a sustained basis becomes possible for all, especially for the at-risk population.

Third, biology of protein calorie malnutrition is not sufficiently known. We only know enough to identify the harmful practices.

Fourth, local resources are not always adequate to prevent malnutrition in the community. However, local resources can

be more efficiently used towards improved state of nutrition.

Fifth, local decisions for resource allocations are usually optimal and increased knowledge by itself does not lead to changes in behaviour. It is well known that behavioral change is a long learning process which involves changes in knowledge, attitude and practice.

Sixth, in spite of limitations in understanding of biology and behaviour and increasing resources, the health sector offers an important channel for action against malnutrition, and a major part of the problem can be addressed through this sector.

Implementation Issues

The general consensus is that limited success in producing nutritional impact through health sector is largely explained by inadequacies in implementation rather than scarcity of knowledge and imaginative ideas on how to approach the problems.

Fortunately, a number of valuable lessons have been learned in recent years, which if properly applied, promise considerable progress in the immediate future.

Long-term and short-term approaches to development are highly complementary. Systematic long-term planning often may appear as being complicated, expensive and time consuming. However, long-term perspective in development is necessary and important.

While keeping the long-term directions in mind, short-term approach to development should primarily focus on the best use of political opportunities towards removal of constraints and barriers to development.

Decisions on priorities, policies and programmes of activities are usually influenced by **policy, science and people**. A participatory process in its full sense requires participation from all three ends. However, chances of success depend greatly on participation of the recipients, and their participation is greatly influenced by their perceptions of priorities and felt needs and relevance of events. In a participatory process, scientists and policy makers should be prepared to give serious attention to priorities as seen by the community and the community should have the right to be wrong.

Participation occurs when a community emotionally and/or economically relates to an issue. In primary health care, child growth is an issue around which mothers become highly emotional. When a mother learns about association of child's health with body size and patterns of growth and diet, then she is likely to become motivated in following the child's growth and would actively participate in organizing activities in the home and the community which would positively influence the health and growth of children. There are a number of experiences where emotional participation around child growth has turned into a popular movement.

All the evidence seems to indicate that successful participatory process in addressing nutritional problems of children would assume proportions much more significant and involved than a project or programme. It may feature such a strong community conviction and involvement that it may be called a "movement".

The "child growth" concept, although highly effective as a mo-

bilizing tool, is not the only universal answer. Other concepts such as effective management of debilitating diseases e.g., diarrhea among children or pregnancy care, also serve as powerful motivating forces in mobilizing the community, especially women for action.

There is a great deal of debate about the pros and cons of top-down and bottom-up approaches. There is not and there should not be a one way approach either way.

At the top level, commitment to nutritional improvement is often very minimal. Therefore, promotion, awareness and advocacy at the top level is important. Also, at the top there is need for enormous selectivity in choice of action.

Multisectoral approaches have overtaxed the management system and have delayed dramatization process substantially. The experiences in Brazil, Colombia, Indonesia and India have documented this problem.

Governments are more likely to be interested in a simple, low-cost and manageable mix of action in order to make an impressive start with the understanding that other elements of action required within a broad strategy would be brought into the picture in a sequence of steps.

At the middle level, the general weakness is in the management areas. This is thought to be generally the reason why many good plans and policies are not effectively realized at the local level. Therefore, the most immediate need at the intermediate level is strengthening of management. It is also critical that a population-oriented management is developed.

Management at this level should be given authority, access to resources and incentives in order to develop harmony and effective working relationships between local institutions including non-governmental organizations and the community itself.

At the local level, there is need for technical support system in order to provide for the substance, direction and efficiency of action.

The bottom-up approach will understandably be much slower and would require considerable change of organizational behaviour in a way that science and policy would play a supporting role and not a directing one. This is easier said than done. Such major changes of roles require substantial understanding, motivation and skill on the part of the scientists and policy makers.

Within such a frame of thinking, the entire strategic design in nutrition planning would aim for establishing a **critical mass** of leaders in the community, science and policy circles who would be willing and skilled in order to set into motion a self-reliant, sustained movement and generate scientific, policy and management support for it at all levels.

Within an **opportunistic planning approach** the focus will be in using political opportunities to remove constraints at a generalizable level. Given current knowledge in looking at the action against malnutrition through health sector, a number of major constraints have come to attention.

There are serious limitations in outreach to the rural areas and the poorest populations which have made it impossible or at least difficult to extend services to the neediest segments of the popu-

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lation. Furthermore, a large share of costs of primary health care services even at the front line level is often met through private sources and the financial input by the public sector is not sufficient by itself. Therefore, among the very poor populations provision of simple services often faces serious financial constraints. This is why some experts are of the opinion that under such circumstances poverty-oriented initiatives should be combined or even precede the public health initiatives.

It is also important to distinguish between the cost/effectiveness and cost/benefit issues. In essence, **cost/effectiveness is science and cost/benefit is a matter of popular judgement**. Therefore, policy makers and administrators have a responsibility to be concerned about cost effectiveness, while it is for the people to decide on adequacy of benefits for the costs involved.

Obviously, such conceptual and strategic factors strongly influence our approach to the subject of monitoring and evaluation. There are two important observations in this area.

First, core of health care services do provide rapid and significant impact in reducing infant mortality and morbidity but very small effect on child growth. On the other hand, activities designed to improve growth could have relatively little effect on mortality and morbidity. Therefore, definition of expected impact and selection of indicators of measurement of success needs to be made accordingly and realistically.

Second, timely feedback within a reasonable time period, perhaps a few months, is essential. On many occasions, the first feedback signals have not arrived before at least two years and that is considered very slow.

V. Integration of health, food and poverty fronts

Broad Enough with a Focus

When the food shortages reached an acute crisis level in the sixties, the international community responded to the crisis through a combination of strong will and miracles of a scientific and technological breakthrough that resulted in an unprecedented increase in food production in many developing countries in a few years. This miracle was named "Green Revolution".

During the eighties, the world should give genuine attention to the serious problems of young children. The fact that 40,000 children died in every day of the past year has gradually turned into another piece of statistics, while it should be a reminder of a crisis which has received so little attention for so long. It is well known that poverty and malnutrition lie at the heart of this crisis.

How can the international community respond to this crisis? In the long run, problems of hunger and malnutrition can be attacked on three fronts: improvements in infant and young child feeding; control of interfering diseases especially among young children and women and entitlements of the poor to adequate food especially increasing food production by the poor. Several

experiences of the recent past have been reviewed in the previous pages.

An impressive approach to the crisis of dying children is primary health care. This concept has three major features: First, places health for all at the top of the priority list of national development objectives. Second, in order to overcome the outreach constraints, it advocates a relatively low cost practical technology, i.e., village health workers and low cost facilities and technics. Third, gives primary emphasis to participation of the community in decisions on priorities, course of action and sharing of local resources to meet the costs. This powerful approach can change the life and future of children, if there is sufficient political will and when a number of operational issues are worked out.

Recent lessons in implementation have shown that while systematic long-term planning is necessary and important, there is need for stronger focus on short-term, low-cost, practical approaches within the general frame of the long-term directions and objectives. In the face of constant frustrations in implementing comprehensive plans, the governments are quite likely to be more interested in a focused, practical and impressive start with the understanding that other elements of actions within a broad development strategy can be brought into the picture in a sequence of steps.

One example of simple, low cost mix of measures within primary health care is convergence of improved “**breastfeeding**/complementary feeding; **immunization** of common diseases of childhood; monitoring of **growth** of infants and young children, oral rehydration therapy against diarrheal diseases”. The mix will have a very strong child saving effect, technology is simple and of relatively low recurrent costs.

However, among the very poor families there will be a critical need for food supplementation for at-risk children and remedies to the immediate problems on the mother’s side.

The problem of maternal nutrition has critical health and development significance, which unfortunately, has received little attention so far. The state of maternal nutrition affects women’s health, their ability to work, to give birth to healthy infants, to provide breastmilk and child care. Obviously the health and well-being of mothers and children are closely interlinked. Maternal nutrition has a strong bearing on universal breastfeeding, appropriate child feeding and health and the participation of women in development.

The important issue here is the grave risk of chronic physiological depletion among women due to repeated and close pregnancies and prolonged lactation. To carry the argument one step further, women are not to be properly nourished only for the sake of giving birth to healthy babies and providing sufficient breastmilk but also for their own health and productivity. Therefore, an adequate diet for women is to be seen as a central issue and a major factor in relation to progress in the health and nutritional well-being of children and women, family life, and participation of women in development as producers, consumers and important members of the family. In this context improved food availability within the household, correction of intrahousehold maldistribution and change of social and cultural norms in favour of women is important.

For the Ultra Poor: Poverty Reduction and Improved Health

Looking at the common pattern of reproduction prevailing among rural women in most of the developing countries, it is clear that women are often in the state of either pregnancy or lactation from the late teens to the early forties. The non-pregnant, non-lactating status counts for a relatively short time out of their total reproductive cycle. Under such circumstances, major ingredients for action toward improved nutritional status are income, food, education and family planning.

Obviously, family planning, especially **better spacing between pregnancies** and smaller family size, would have a significant effect in reducing the physiological demand and, therefore, the food needs among young women. Moreover, women will have more time and freedom for child care and productive work and their state of health will improve considerably.

For reasons of convenience, this focused mix of action as described above may be called GOBI-FF. In essence, immediate action on the crisis of dying children would be strongly enhanced, reinforced and strengthened through action on the food and poverty fronts on the following grounds:

First, improved food availability for undernourished children and mothers will have to be built into the programme effectively.

Second, ultra poor or the bottom twenty percent of the poor is very difficult to reach and the current development efforts have often bypassed them.

The important lesson is that within a frame of child-focused action for children among the ultra poor, there is need for a certain effort on the poverty front in order to set the stage for participatory process of action on the health front. Therefore many experts are of the opinion that in very poor communities the initial stage of action should be organized around poverty reduction approaches. In other words, for the ultra poor, the initial take off needs to be brought about through modest economic and technical inputs which would stimulate and motivate the community for action around more income and food and would set the stage for addressing child health issues. The experiences of Nepal demonstrates the issues clearly.

Third, primary prevention of malnutrition among the poor cannot materialize without access to sufficient food. Adequate food entitlements can be achieved when the rural poor find the opportunity to produce more food. In the long run this goal can be reached through varieties of measures including subsidizing production and consumption, improved extension, credit, education and orientation of agricultural technology to the needs and abilities of the rural poor, the landless and ultra poor.

Unfortunately, there is a strong indication that even under the most optimistic scenario, most probably there will be little or no improvement in the economic environment in low income developing countries including external balance of payments, growth of income per capita, food production per capita, for the next two decades.

Then what are the implications for design and implementation

of food and nutrition strategies in low income countries?

- a. Strengthening self-sustaining initiatives, actions and activities within countries and communities directed toward self-provision of food, self-care and help.
- b. Reduce dependence on overly complex and overdependent relationships with outside world.
- c. The low income countries are paying a very high premium on integrated and interdisciplinary approaches. Therefore, it is extremely important to recognize the critical value of adopting a sequencing strategy where problems are addressed with sufficient focus and flexibility. Therefore, the process is strengthened through support of a doable and affordable mix of measures in order to avoid an over integrated approach where action on too many fronts is attempted at the same time, and resources are spread too thin.

However, it is important to recognize that food problems can only be effectively addressed through **food system**. The most promising concept in addressing food and poverty problems of the poor/ultra poor is: **food security at sub-national level** where food security for people becomes the central concern.

The **national food strategy** enunciated by the World Food Council is designed around the concept of food security for people and proposes a stepwise approach to national food issues. The national food strategy aims for integration of policy, technology and resources at national and sub-national levels and puts production and consumption/nutrition issues at equal focus. There is no doubt that interaction between the interests of the producers and consumers is at the heart of policy issues in this strategy.

In operational terms, special attention to a safety net component for the poor, investment on small farmers and explicit attention to food needs of mothers and children, effective bridge between action on health/food and income fronts and genuine emphasis on self-reliant participatory approaches are among the important dimensions of this strategy.

Given the current thinking, the national **health sector strategy** within the primary health care approach and the national **food strategy** present a number of common features. They both propose focused stepwise approaches to major issues; emphasize priority attention to the needs of the poor and the vulnerable population; recommend low-cost technology and participation of the community in the process of action. However, entry through the food system most probably carries stronger attraction so far as profit incentives and community felt needs are concerned.

Furthermore, food system has been in place for a long time even in very poor remote areas. Therefore, problems of infrastructure and appropriate technology are relatively less likely to present severe limitations.

In the immediate future the world has a realistic opportunity to face the crisis of dying children through a global movement to generate a health/child feeding revolution. Looking further into the future, the world may well be the witness to another breakthrough.

Perhaps before the end of this century another scientific and technological breakthrough in food and agriculture could come

with no less importance and significance than the Green Revolution. This will have to be a breakthrough in orienting food and agricultural technology to the needs and abilities of the rural poor in order for them to increase food production and improve their economic and health conditions.

This breakthrough will come when "the crisis of hunger" becomes a matter of serious concern just as the crisis of production has been over the past two decades.

The global understanding and concern over hunger will be strongly enhanced when a more effective **bridge**, conceptual and operational, is built between the health and **food systems**. The need for it is only partially understood within the scientific and policy circles. The community can also play a major role in its establishment. The final answer will be a matter of joint effort on all fronts.

VI. Applied Research in Food and Nutrition

Major Objectives

The primary purposes of research would be:

- a. To increase sensitivity to and awareness of problems of hunger and malnutrition at various levels.
- b. To develop synthesis of knowledge and experience on the costs, benefits and effectiveness of various lines of action in order to influence the priorities as seen by policy makers. For this purpose, the research results need to be expressed in a language with which policy makers are commonly conversant.
- c. To add elements of applied science and technology to the community movement in order to provide scientific basis and direction, technical and management support.
- d. To develop a more effective bridge and harmony between science, policy and public.

Research around such objectives can take place at three levels i.e., super national, national, middle and local. It is clear that such an approach to research is likely to give urgently needed additional emphasis to implementation issues without undermining the need for research in substantive areas themselves.

Need for support to research at the international level is justified on the basis of comparative advantages and also the fact that necessary skills may not be available at the national level and not likely to develop within the time span that the research results are needed. Undoubtedly, the most important outcome of research support in developing countries would be increase in scientific, technical and analytical capacity and strength of national institutions. However, it is important to recognize that access to synthesis of experiences would be extremely effective in improving the policy and programme quality in the field of international assistance, which is highly complementary to and not in conflict with, the role of research in national institution building.

Priority Areas

The most urgently needed research for action at the **national level** would be for the purpose of advocacy and influencing priorities in favor of hunger/malnutrition issues. At the **middle level**, research can be most useful in improving the management capacity and effectiveness and adoption of more effective methods of participatory management. At the **local level**, the most important focus of research would be on effective methods of providing technical support to local initiatives in addressing problems of hunger and malnutrition especially among the at-risk population.

In the meantime, it is important to recognize that the ultimate success in combatting hunger and malnutrition will strongly depend on harmony between science, policy and people and participation in the real world would be a meeting place between scientific values, government priorities and local views.

Integration is often misunderstood as having different disciplines working at the same time, though they may be doing separate things. True integration takes place when different disciplines take a unified approach to the same problem jointly from different perspectives and using different skills. Practical implications of this approach are many. The most important ones are adequate competence, cultural relevance and continuity.

Given the limitations in the developing countries, the establishment of an international/national network of institutions would be among the best available mechanisms in promoting policy- and action-oriented research on hunger and malnutrition. As a matter of fact, a network of international/national research institutions in agriculture have been quite successful in promotion of action-oriented research and this mechanism can be effectively applied for research in the field of hunger and malnutrition.

Research Agenda: A Recent Exercise

A recent research planning exercise by the Sub-Committee on Nutrition of the Administrative Coordinating Committee of the United Nations (ACC/SCN) and the International Food Policy Research Institute (IFPRI) has resulted in a research agenda on nutrition related policies and programmes. In developing this agenda, primary focus has been on research with best potential for immediate action and concentration on analysis of process.

Research priorities have been identified keeping in mind the policy dimensions and research issues that cut across many policies. The following four research areas have been identified:

1. Integration of nutrition and health approaches.
2. Transfer of food and income for better equity.
3. Design of food subsidy schemes for consumption needs of the at-risk population.
4. Agricultural policies and impact on nutrition.

Major research issues relevant to all above policy areas include:

1. Implementation especially at the local level.
2. Interaction between local power structure and success/failure of various programmes (including household acquisition).
3. Village and market relationships (flow of foods, price formation, storage, seasonality).

4. Macro-economic implications, for instance, price subsidies and implication of foreign exchange, trade and local agriculture.

A great deal of research is being conducted in the developing countries now which are quite programme and location specific. The stress on additional research is to satisfy the urgent need for generalizable research as a complement and **not** a substitute for the former. This is the approach which was adopted by the international agricultural research institutions which centered around issues of immediate concern to the developing countries and the outcome could be easily picked up by the national institutions in the same field.

Another method of ranking research priorities would be to link them to the issues that decision makers are facing and in that context they may be grouped in the following three categories:

Category one - Analysis and synthesis of the experiences which have proved to be practical, effective and produce good results.

Category two - Experimentation with the ideas and approaches, which on the basis of suggestive evidence, are quite likely to be practical, effective and will produce impact.

Category three - Other research items.

Some typical examples of research agenda in these three categories are as follows:

Category one - Iron fortification of salt
Mass distribution of vitamin A
Child growth monitoring
Identification of the ultra poor

Category two - Effective approaches to increasing birth weight
Increasing efficiency and impact of food supplementation programmes

Category three - Study of household behaviour in food acquisition
Household decision and behaviour in relation to child feeding and care
Epidemiological studies of various nutritional disorders
Evaluation studies, for instance, appropriate speed for expansion of successful experiences under various circumstances.

It is quite clear that research efforts are neither needed nor recommended on issues which have already been sufficiently researched. Except that on many occasions major operational and organisational aspects of various interventions are poorly understood while the clinical and biochemical aspects of the same subject area have been well researched.

Another critical area for research is identification of common areas of interest and action between social and biological sciences where a true marriage may make a difference in the next few years. For instance, modifications of working patterns, social or-

ganization and introduction of new technologies which may reduce the energy cost and improve efficiency in production and daily life and the spin offs for mothers and children fall into this category of research.

To be more explicit, it is the interaction of biological and behavioural dimensions of nutrition-oriented activities which is least understood. Many nutrition programmes have a biologically sound basis, and it is the weakness on the behavioural side that has constrained good results. One challenging area of research in nutrition is to find processes through which biological, social and behavioural dimensions can be conceptually and operationally unified.

As a matter of fact, in comparing the Green Revolution and the GOBI-FF concept, this phenomenon is transparent. First, profit motifs which were shown to be a very important driving force behind the expansion and substance of Green Revolution.

Second, delivery mechanism for application of the Green Revolution concept was well known and in place. Therefore, science offered an opportunity without serious behavioural and operational constraints.

The GOBI-FF concept does not seem to be as straight forward in this respect, and research in this area deserves a high degree of attention and concentration. Major research questions in this area:

How profitable is GOBI-FF?

How to demonstrate its profits in order to generate positive behavioural response?

What are the alternate effective delivery mechanisms and what are their costs?

In recent years there has been considerable progress within the international organizations in systematic analysis and identification of research needs in food and nutrition. The next critical step is to define and put in place an effective mechanism to promote, generate support and facilitate implementation and strengthen application of research results.

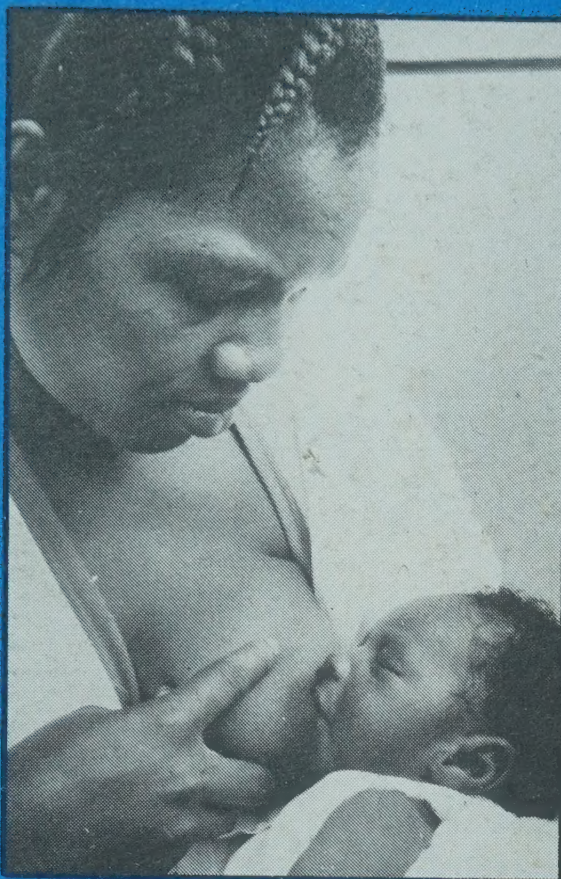
The network of international/national agricultural research institutions have been quite effective and successful in this respect in the last two decades. Therefore, the concept of institutional networking should be given serious thought as an effective mechanism to bring about accelerated action in the field of food and nutrition research.

"CURRENT VIEWS ON NUTRITION STRATEGIES" AN INFORMAL CONSULTATION

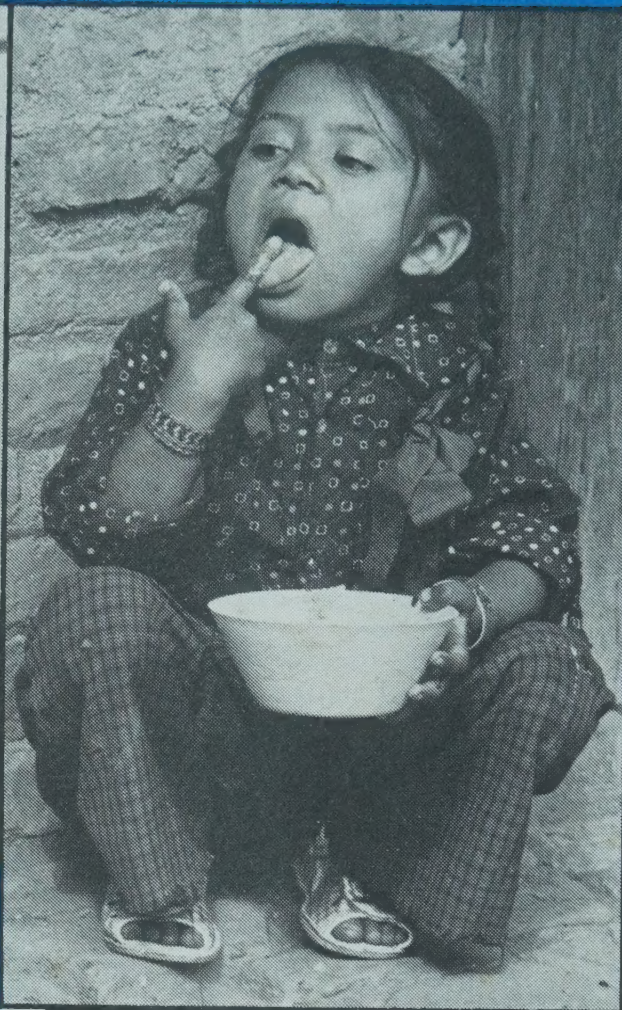
UNICEF, New York - September 25-26, 1982

Basic Supporting Documents

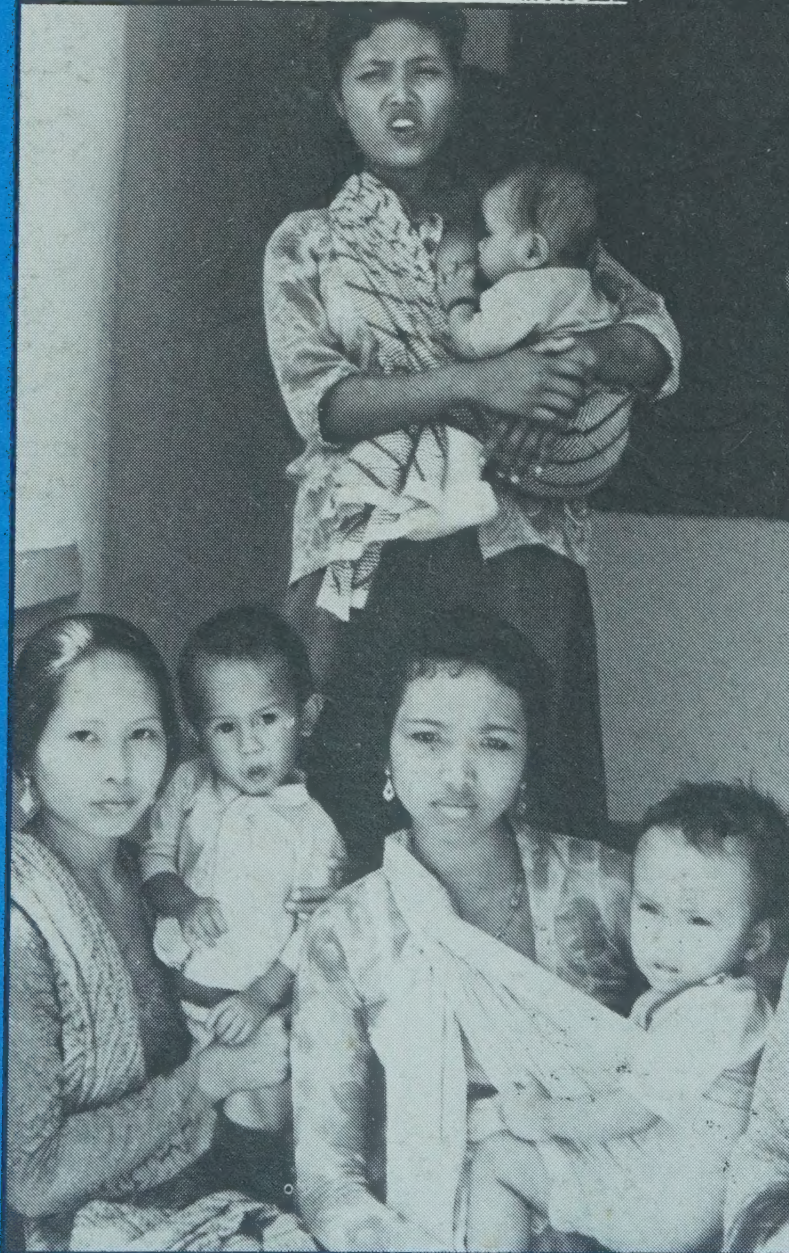
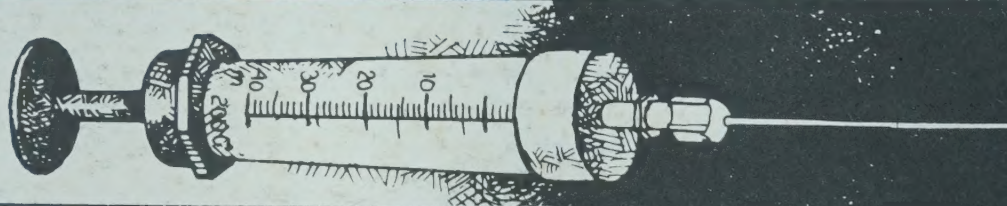
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Breastfeeding
Immunization



Food



Family Planning

Growth Monitoring



Oral
Rehydration
Therapy

